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ABSTRACT

This report deals with the special kinds of adaptive changes which may be demanded of teachers in a changing society. In discussing future inservice teacher education, certain needs are identified and enlarged upon. Emphasis is placed upon the following objectives: (1) the need to develop among youth the skills associated with problem-analysis and problem-solution; (2) the need to develop, throughout the curriculum, a high degree of social awareness; (3) the need to deepen students' understanding of participatory democracy, commitment to its ideals, and a sense of moral and civic responsibility; (4) the need to strengthen students' values and priorities, with respect to personal and public good; (5) the need to instill greater optimism regarding the human capacity to overcome social difficulties and heighten the quality of life; (6) the need to nurture, in every student, a clearer perception of how one's personal future can be shaped. Ways and means of encouraging teachers to develop professionally and improve their teaching skills with the above goals in mind are discussed. (JD)

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The Societal Future and Teaching

Louis Rubin

Every art is subject to its periodic alterations. Some changes are evolutionary, occurring as practitioners discover new and more effective ways of plying their craft. Other changes, in contrast, are adaptive; that is, they occur as external circumstances make readjustments of one sort or another necessary. The odds are good that, in the time to come, both kinds of changes will have an effect upon the art of teaching.

What we are chiefly concerned with here, however, are the special kinds of adaptive changes which may be demanded by the shifting social scene. To anticipate these changes - at least to the extent that they can be anticipated - several sequential steps are essential. First, we must project, from the most reliable social forecasting data available, probable shifts in the society itself. Next, by analyzing the implications of these shifts, we can approximate corresponding modifications which could be required in the educational system and in the practice of teaching. Once these have been estimated, it then becomes possible to speculate about the re-training activities which can best facilitate the required changes in teaching practice. Finally, extrapolating from these projected in-service training activities, we can, perhaps, judge whether our present mechanisms for accommodating the professional development of teachers in-service will be adequate.

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These steps, to be sure, constitute a relatively complex process and - because of this complexity - one that is subject to error. Yet, the hazards notwithstanding, there is more to be gained from testing the process, and risking partially inaccurate results, than from simply doing nothing. First, the chances are good that the answers we reach will not be entirely wrong, and, second, when miscalculations do happen, later corrections can be made. The alternative, self-evidently, is to once again be caught-up in the habitual failure which comes from being too late with too little.

What, then, can be said about the societal future? At the outset it is important to observe that every credible futurist is mindful of the follies inherent in prediction. A distinguishing characteristic of social forecasting, in fact, is the frequency with which seeminly plausible projections eventually prove to be wrong. The problem in this regard is not so much that futurologists work with defective crystal-balls; rather, it is that predictions often prove inaccurate because humans are remarkably resilient and - faced with an impending crisis - they tend to amend their former behavior. The point is an important one because it may well be that the concept of greatest significance, in anticipating education's future, is that, nothing is certain, pre-ordained, or immutable. Those who make a business of speculating about the human events which lie ahead generally differentiate between short-term (five-ten years) and long-term projections (ten to twenty-five years). Accuracy, obviously, is substantially greater in short-term predictions. For our purposes here, therefore,

it is the immediate rather than the distant future that is of greatest moment. Finally, to note one further qualification, speculations about the future society span a vast gamut. Social scientists are concerned with economic trends, population, food and production, and planetary movements. While all of these are of interest, some are a good deal more relevant to public education than others. It is of no particular consequence, for example, from the standpoint of schooling, whether plastic foods are developed by 2010 or 2025. The importance people will attach to their ethnic identity, on the other hand, is of considerable consequence. In the discussion of prospective trends which follows, therefore, primary emphasis is upon those occurrences which likely will have considerable impact upon the means and the ends of education.

Scenarios on futurity have by now been well-publicized in the media. Humans will unquestionably become increasingly interdependent, and the curriculum must therefore increase students' global awareness and general sense of worldliness. Similarly, in a society which is bound to be more technocratic, knowledge will continue to constitute a high form of power and vocational skills will become more rather than less sophisticated.

It also seems clear that the ancient contradictions between a person-centered and society-centered school will be exaggerated. As affluence and leisure combine to spawn a growing interest in self-expression and self-fulfillment, and as special interest groups within the societal

organization begin to exploit the political power of education, schools will come to be viewed as agencies which must serve private as well as public aspirations. Since, on the other hand, no society can do without a school system that helps to perpetuate the social order and to transmit dominant values, confrontations and disputes are inevitable.

The unknown, in this connection, which may hold the greatest fascination for social scientists, has to do with the effects of an increasingly self-indulgent, potentially hedonistic-citizenry, on the social system's productivity. One finds, for example, in contemporary theoretical writing on the politics and administration of education, repeated reference to the school as a powerful vehicle for sustaining the status quo, perpetuating social injustices and inequities and, generally, for serving the needs of the corporate power structure. Irrespective of the validity of these indictments, it seems certain that prolonged debate will rage over the alternative purposes of education.

Prolonged conflict, presumably, will be evident on other fronts as well. As various coalitions seek to serve their own special purposes, as the "haves" seek to counteract the efforts of the "have-nots" to bring about a redistribution of social benefits and resources, as minorities act to neutralize the advantages of the majority, an endless parade of internicine wars will unfold. The resulting implications for education are obvious; the instructional program will need to be realigned so that students gain a good deal more experience in the techniques of negotiation, compromise, and conflict resolution.

It is hardly surprising, under these circumstances, that an old issue has once again risen to the fore. Educators have argued from time immemorial over the capacity of schools to shape the society. Reason suggests that if the schools can make their mark upon the values and beliefs of the present youth generation, those in the nation's classrooms will be inclined to work toward a healthier and saner social order once they inherit power during their adulthood. Such reasoning, however, has never proved right. Aside from the fact that our ability to influence the values and life styles of students is something less than potent, many other forces in the out-of-school environment of children also have heavy impact on what they think, believe, and prize. Hence, one may conclude that (a) the schools' attempts to overcome the less desirable lessons of the outside world are too feeble and must be strengthened or, (b) such ambitions are akin to an impossible dream and should be abandoned once and for all. At the moment, although nothing approaching a consensus exists, most critics are skeptical regarding the school's ability to re-make the society. Yet, few are willing to argue that all efforts should be completely eliminated. Put another way, for most observers, irrespective of whether schooling can offset the deleterious aspects of other experiences, there is a general belief that it must do all that it can to at least diminish their force.

Not just futurists, but educators, public officials, and parents themselves have also become increasingly concerned about the mood of pessimism which apparently has overtaken the young. While hardly

anyone can have failed to note the growing societal malaise, adults tend to be divided into camps of optimists and pessimists. There are those, in short, who seem to have been beset with a sense of inevitable doom and are convinced that nothing can save us from ourselves - and those who, while acknowledging the serious difficulties humankind faces, believe that solutions will be found.

Among the young, however, pessimism seems to have badly outdistanced optimism. There is, as a result, good reason to believe that the school's must seek to rekindle a feeling of combative resilience and a faith in our capacity to solve our dilemmas. More generally education must do everything possible to instill in students a commitment to the creation of a better society. And, coupled with this commitment, it must also instill a knowledge of how something better can be achieved. What this means, in practical terms, is that the curriculum must, first, familiarize students with the egregious problems that now threaten to do us in, and second, provide cumulative practice in the skills of social problem-solving.

Many observers are convinced that if we are to produce a generation willing to pit itself against the challenge, direct involvement, early on, is crucial. They thus advocate a program of schooling which allows children to carry on a part of their learning in the wider community, away from school, through participation in "social improvement" activities. Their contention is that such activity nurtures an altruistic spirit, yields direct practice in participatory democracy, and permits a highly desirable interaction between child

and adult, as well as between school and community. The more aggressive of such critics, moreover, are quick to argue that time devoted to these experiences will ultimately prove to be at least as valuable as that now spent in classrooms. The virtues of these arguments, of course, remain a point of argument and the feasibility of coping with the logistical problems is uncertain, but the need nevertheless for future citizens who are socially aware, committed, and adept at initiating social change seems unquestionable. In sum, whereas the present instructional program is predominately geared toward individual and societal productivity, the future one must center somewhat more upon the improvement of life.

One cannot help but feel, in considering such admonitions, that - as frequently has been the case - our ability to identify goals and objectives is larger than our ability to define the procedures through which they can be achieved. We are, in fact, a long way from knowing what we must know to effectively educate for the societal tomorrow. A recent Rand Corporation report, entitled How Effective is Schooling, is instructive in this regard: "We have identified six major issues toward which we believe educational research could profitably be directed. First, research must examine the extent to which, and under what conditions, learning takes place outside the school. Second, the concept of interactions must be more deeply investigated. Third, the vastly different forms of education that have been suggested as alternatives to the present system should be investigated. Fourth, we must begin to examine educational outcomes over time and on many

dimensions. Fifth, the approaches must be merged. Each offers insights not available to those who work in the others. Each has blind spots. There have been far too few attempts to use the strengths of one approach to overcome the weaknesses of another. And sixth, analysts must recognize the cost implications of their results."

Because our visions of the future derive from our memories of the past, it is sometimes difficult to reckon with the idea of major deviations from the present way of things. Apart from minor variations and refinements, the teaching-learning process has been relatively constant for the last several hundred years. Some presently ongoing experiments, however, suggest that major breakthroughs in our understanding of the way learning takes place could occur. Should this happen, corresponding changes will, in all probability, be established in our instructional technology. Research in the chemical and biological aspects of information storage efforts to teach children methods of autonomic control, the utilization of drugs to counteract learning impediments, and a possible redefinition of the basic nature of intelligence, for example, could all have an impact upon the future school. While such conceptual discoveries are unlikely for the period immediately ahead, and while a substantial amount of time undoubtedly would need to elapse before the discoveries could be made operational, it is nonetheless of interest to note their possibility.

Life in posterity, because it is largely unknowable, has a timeless fascination. Humans have always sought to guess what sorts

of things lay in waiting, around the evolutionary corner and - when existing difficulties raise our anxieties about the fates which could befall us - interest in future survival is even more pronounced. A great deal, consequently, has been suggested in the way of desirable controls against the prospective dangers. It has been argued, for example, that we need a new mix among handicraft labor, modified technologies, and limited heavy industry. It has been suggested that the commune and the neighborhood must become the new locus for individualizing welfare services. It has been contended that we desperately need to fashion a new kind of economic system, wrought out of grass roots control, human cooperation, and the reduction of our present corporate bureacracy. It has been observed that work must be made a more-fulfilling and less-exploitative endeavor. And, significantly, it has been recommended that we put an end to compulsory education and initiate a network of folk schools and child-minding cooperatives. The merits of these conjectures can only be validated or invalidated with the passing of time. They are, as a result, beyond the rational scope of responsible school administration. The educational leadership must, instead, restrict its manipulations to problems and to problem-solutions which are more understandable, more manageable, and more certain.

The odds are also good that, in the school of tomorrow, a number of pragmatic alterations also will be apparent. Substantial use, for example, likely will be made of the computer. Present experimentation

leads to the inescapable conclusion that the computer can be a valuable ally; hence, it undoubtably will be used in monitoring student progress, in diagnosing learning errors, and in prescribing corrective exercises. Computers will be pressed into service primarily with respect to cognitive learning, but they also may be utilized in the storage and retrieval of information on the individual learner's affective characteristics as well. Sustained efforts probably will be made to expand student involvement in planning and selecting learning options. High schools, for instance, will begin to resemble present colleges. The possibility of interactivity television, permitting dialogues among students and teachers in disparate locations, may make home-based instruction a reality. Whether students (and parents) will look with favor upon such programs, however, remains moot.

As more is learned about the functions of peer-group counseling, and mechanisms through which affective and cognitive learning can be integrated, psychological education for self-knowledge and personal competence may be initiated. It is conceivable, as an illustration, that children will be assigned to a peer-counseling group, in the early grades, with which they will maintain continuous affiliation throughout their school careers. Such a maneuver, presumably, would provide membership in a kind of surrogate school-family, reduce student isolation, and increase opportunities for the sharing of concerns and problems.

Because of irrefutable logic inherent in the assumption that no particular approach to schooling can be best for all students - irrespective of their interests, needs, and nature - the present

interest in educational alternatives probably will grow. But, whereas, current explorations are primitive, future ones are likely to be a good deal more sophisticated. The chances are that in the organization of future schools, alternatives with respect to subject-matter, learning method, time and place, all will be available to students within a single instructional facility. The instructional curriculum, in turn, will encompass a body of required study units and an array of options from which students can select. And, while the specifics are impossible to predict, present theoretical thought leads to the conclusion that some form of structural reorganization is probable. Students, for example, may begin with a program in basic skills, followed by, say, a three-year sequence in arts and humanities; or, a period of concentrated study in the traditional disciplines. These may be interspersed with segments of affective education or intensive short-term learning experiences in the community proper. It is here, perhaps, that matters are most uncertain but, in any event, the limitations of the present K-12 system, necessitating adherence to an invariant format of time and subject presumably will become obsolete.

It suffices to say, therefore, that for the purposes of in-service education, it is the unfinished business of the present that must predominate. Our seeming inability to truly individualize learning, our failure to teach substantial numbers of the young to read, our problems in integrating formal and non-formal educational experiences, our need to better integrate the cognitive and affective dimensions of growth and development - it is these seemingly that are of greatest essence.

Turning, finally, to the heart of the matter, any generalizations we make regarding in-service education for the future, logically, must be viewed in the context of in-service education problems in general. All teachers function at a particular level of expertness with respect to technical knowledge and skills, all teachers reflect personal values regarding the aims of teaching, and all teachers tend to manifest particular strengths and weaknesses. Efforts to design professional growth experiences which prepare teachers for the educational future -- with respect to both the method and content of instruction -- must therefore begin with the dilemmas of the present. Some students, to wit, still find their classrooms boring; some continue to be alienated by the seeming lack of relevance; and some remain convinced that school life is singularly unresponsiveness to their dominant interests and learning preferences.

And, on the reverse side of the coin, many teachers have strong conceptions regarding their own professional goals and therefore seek opportunities to develop and enlarge the particular attitudes and

competencies which, in their judgement, are most useful. Hence, while the in-service requirements relating to the future may differ from those at the present, both must be considered in conjunction.

Viewed in the large, the major clues for teacher in-service education in the time ahead would seem to embody the following; (1) the need to develop -- throughout the curriculum -- a high degree of social awareness (2) the need to develop among youth the skills associated with problem-analysis and problem-solution (3) the need to deepen students' understanding of participatory democracy, commitment to its ideals, and a sense of moral and civic responsibility (4) the need to strengthen students' values and priorities, with respect to personal and public good (5) the need to instill greater optimism regarding the human capacity to overcome social difficulties and heighten the quality of life (6) the need to nurture -- in every student -- a clearer perception of how one's personal future can be shaped.

At first blush, these objectives may seem amorphous, so vague in meaning as to be practically useless. Or, for the more cynically-minded, they may smack of the platitudes which sometimes are used to define educational intent. Yet, some ideals can only be expressed in imprecise terms. And, despite the imprecision, they can be of considerable use in pointing the way.

A skillful and imaginative teacher, for example, can do a very great deal in the way of expanding social awareness. The lyrics of popular songs, newspapers, contemporary "social-commentary" TV programs,

and a vast abundance of similar material can be used in literature, social studies, science, mathematics and even career education classes to increase student sophistication regarding family disintegration, drug abuse, the havoc wrought by human greed, and so on.

Similarly, virtually everything we wish to teach can be taught in a problem-solving context. During the recent decades much of the curriculum has become inquiry-oriented. Children have grown accustomed to searching out cause and effect, testing hypotheses, predicting the consequences of particular actions, comparing alternatives, and so on. A good foundation already exists, consequently, for the extension of these procedures into a generally more comprehensive emphasis upon various kinds of problem-solving techniques. What must be underscored, in this regard, is that the point in encouraging children to think about prospective solutions to social problems -- and, for that matter, personal ones -- is not the quest for workable solutions (although the notions emanating from the minds of children might not be much worse than many which have stemmed from adults) but rather to inculcate a constructive mental-set toward problem-solving.

For much the same reasons, life in the classroom must provide a better example of democracy in action. Wherever the subject-matter or school activity permits, learning should sharpen insights regarding negotiation and compromise, as well as provide direct experience in conflict resolution. Through such activities students can learn, not only a tolerance for divergent points of view, but a respect for the

the mechanisms of the democratic process, and -- even more fundamentally -- a familiarity with what recently has come to be called "people power".

The matter of values and priorities, too, transcend particular areas of the curriculum. Issues regarding priorities have become crucial because, whereas in the past the human problem was to choose between right and wrong, in the future we likely will need to make infinitely more difficult choices between two conflicting "rights". Hence, the curriculum must provide routine exercise in choice-making -- in effect -- a special form of problem-solving. Moreover, since the need to choose is in itself often anxiety-provoking, there are emotional as well as intellectual dimensions involved. The need, therefore, is for instructional activity which helps students to formulate healthy values, to translate these values into moral judgements regarding personal and public priorities, and to minimize the emotional tensions inherent.

The restoration of optimism and the re-invigoration of social spirit, obviously, are particularly relevant to the final years of high school. The cumulative fashioning of students' personal future images, on the other hand, can be worked upon from the middle years onward. Both objectives, plainly, are related to the humanistic aspects of instruction. As in the case of the other pursuits, consequently, they can be fused with substantive instructional content across the curriculum.

If, in the time to come, teaching becomes increasingly specialized, the organization of in-service education for the future will take one direction. But if the move toward specialization is resisted, it will

be necessary to organize events so that a multiplicity of requirements can be dealt with simultaneously.

Given this collection of short-range teaching requirements for the period immediately ahead, the key question then becomes: Can the present system of procedures accommodate the needs?

Teacher in-service education, historically, has never amounted to very much. Davies once synthesized the situation in one terse sentence: "In-service teacher training is the slum of American education -- disadvantaged, poverty-stricken, neglected, psychologically isolated, riddled with exploitation, broken promises, and conflict." Again and again, a useful innovation has been dissipated at the door of the classroom, simply because we have failed to prepare the teacher to use it intelligently.

For the most part, teacher in-service education has been a kind of massive spectator sport. The typical program lacks vitality and focus. What is known about modifying human behavior goes largely ignored. Teacher incentive is scant. The outcomes of retraining, not surprisingly, are generally poor.

Successful teaching is dependent upon a number of distinct skills. Teachers differ markedly in the extent to which these have been mastered. Their retraining needs, accordingly, are far from uniform. Yet, we lack ways to individualize retraining with reasonable economic efficiency.

Moreover, all parents do not have the same expectations of their schools; all children do not learn in the same way; all learners do not

have the same abiding concerns. Thus, the teaching of eighth-grade history must vary according to the situation -- it often needs to be of a different order in two classrooms of the same school. We therefore must have methodologies through which we can assist the teacher to accomplish a specific task, in a specific situation, with a specific kind of learner. In short, we must devise programs which make it possible for the teacher to function in the environment and subculture of the particular school.

Present in-service training programs usually take one of four forms: (1) expository exhortation, either spoken or written, through which teachers are implored to utilize a particular method, emphasize a particular set of ideas, or accept a particular set of assumptions, (2) demonstration teaching in which an expert demonstrates a teaching method with students, (3) supervised trials in which teachers attempt to use a specified teaching method, or teach a prescribed lesson, and are then subjected to critical appraisal, (4) performance analysis in which the classroom actions of teacher and students are recorded and reported to the teacher so that an analysis of error can be made. Since teachers are subject to as much individuality as all other humans, responding differentially to training stimuli, and since the appropriateness of a training method varies with the task at hand, teacher retraining must be multilateral rather than unilateral. We need systems which permit us to integrate a variety of training devices within the same program.

We have tacitly assumed that a supervisor, a principal, or a college professor -- as a privilege of ordainment -- is able to train teachers in whatever tactics are needed. This assumption, of course, is unreasonable. If we are to exploit the potential of staff development programs to promote useful educational change, three things are indispensable: we must develop an effective training methodology; we must train "trainers" to use the methodology; and we must cause those who judge teachers and who measure their worth to understand and value the goals of the training.

Our attempts to improve teacher in-service education are still hampered by a lack of systematic theory. In the absence of such theory, it is difficult to build efficacious procedures. To accomplish effective teacher growth we shall need to help teachers to develop tested techniques, and to gain insights which ultimately make them self-sufficient in solving their own instructional programs. The teacher must know both what to do and why to do it.

When the issues of teacher retraining are debated, there often is a mythical belief that better training will, in and of itself, produce better teaching. The fact is that few teachers function anywhere near their optimal capacity -- neither, for that matter, do most administrators and researchers. If teachers can already teach better than they are now teaching, how can we improve matters if we increase capability but not incentive? Respectable experiments have demonstrated that teaching performance is substantially improved when the grounds for reward are made explicit and when tangible pay-off actually occurs.

Two pertinent provisions must therefore be put into widespread practice. First, schools must reorganize their system of staff deployment so that perhaps ten percent of the teachers are free for retraining at any given time, and, second, schools must begin to invoke sanctions against poor performance and offer rewards for good performance.

Because of the great difficulty in measuring the results of teaching, administrators tend to make little effort to distinguish the pedagogical strengths and weaknesses of each teacher. Moreover, improved performance in the classroom normally does not result in any direct recognition for the teacher. While most teachers, of course, have a genuine desire to teach as well as they can, their motivations frequently are distilled by a variety of personal and organizational factors. As a result the typical teacher does not find it imperative to increase competency through continued professional development. Even where the training program is of high quality, teacher incentive may be low. Teachers usually adjust their labors to the standards of their faculty group and perform at the particular level required for survival in the system. As a consequence, retraining programs must, among their other obligations, raise group expectations.

A passage from an earlier writing may serve to convey the spirit of the correctives needed to cope with the problems of in-service education.

"If there is to be significant improvement in education, the nation's teachers as professionals must manage their own intellectual

growth. They must, in short, have an improvement program which allows them to advance their professional artistry.

The program must first acknowledge that the competence and zeal of the teacher are far and away the single most important factor in quality instruction. Teachers are individuals who differ tremendously in strengths and weaknesses, in intellectual backgrounds, and in responses to their teaching situation. Yet we tend in our teacher education efforts to treat them in clusters. The difference between teaching which is routine and teaching which is inspired depends to a large degree upon the teacher's own sense of motivation and commitment. The desire to change, if it is to be consequential, must come from within the individual. Mediocre teaching can distill and even pollute the value of everything that goes on in the classroom. Nothing that we invent in the way of content or method will be worth very much unless it is used competently. In-service education should not be, as it has sometimes been, merely another theatre for puppets. It should set a stage for growth -- but in the tradition of the Comedia del Arte, where actors did not memorize, but improvised their lines.

The teacher functions in a school environment that is often antithetical to his improvement. The educational fraternity has, upon occasion, behaved as if teachers were essentially pawns acting out the genius of someone else. Teachers have been inundated with prescriptions for proper pedagogical behavior. The profession, let it be said, has not been oblivious to these problems. Men and women of unquestioned

ability and of strong commitment to better education have worried about the growing danger that change will be prized for its own sake.

Because it is virtually impossible to teach a class so badly that no learning takes place, survival has been easy, but the price of ease has been the inhibition of experimentation. Indeed, the forces that have argued against disturbing the status quo have probably overpowered those which have argued for seeking a better way. Because we have, moreover, never been too clear about the delicate balance between the artistic and scientific aspects of teaching, nor about the balance between teaching individuality and the need for consistency and unity in the school, our tendency has been either to leave well enough alone, or to impose innovations on the school, shifting colors from year to year like a seasonal change in fashion.

In sum, the present scene is characterized by a dangerous tendency to change haphazardly, with little regard for the understanding and sophistication of the practitioners who must sustain the change, and by a tendency to disregard the teacher's right and obligation to be captain of his or her professional soul. We have become preoccupied with the achievement of visible differences without adequate concern for the internal restructuring within the system -- and within the individual teacher -- on which such overhaul depends. We need a method and a program that will ensure rational change, that will generate a professional growth in the teacher as a necessary precondition

to better schools, and that will make possible the utilization of on-going research in a sensible manner."

What, then can be said about the needed restructuring of teacher professional growth?

The problem, distilled to its essence, is simply that the traditional devices of in-service education -- the workshops, the one-session inspirational meetings, the district committees -- have in the main had limited effect upon the teaching body politic.

What is needed is a strategy of in-service education that can overcome the chronic obstacles and, concomitantly, can offer at least some preparation for the inevitable changes of the future. The chief hurdles are familiar themes: in-service education is no different from education elsewhere and the learner is subject to the usual elements of attitude, incentive and purpose; the curriculum has always shifted in piecemeal fashion and the immediate future gives promise of even greater fragmentation and disjointedness; and, we cannot conceive of the classroom teacher in any one image or mold, but must cope with an almost infinite variety of professional profiles that differ in both degree and kind. It follows, therefore, that any workable strategy must concern itself with the matter of motivation, with provisions for overcoming the harms of fragmentation, and with procedures which facilitate the individualization of teacher retraining.

In-service education is not merely something which is done to teachers; it can be also something which teachers do to and for themselves. If we can meet the demands of motivation and provide the

substantive wherewithal for self-directed development, we can perhaps achieve the larger objectives of in-service growth and, in concert, aid and abet the transition to the future. Most importantly, we can exploit the teacher's capacity for uniqueness, for initiative, and for the joys which derive from cooking one's own soup. This is not to say that traditional in-service techniques ought to be abandoned, or that growth cannot be nurtured through a group process. It is rather to suggest that such efforts should be amplified through stratagems which supply connective tissue to individual teachers, to their private strengths and weaknesses, and to the specific concerns they carry.

The inescapable fact is that realistically the curriculum is what takes place after the teacher closes the door and starts to teach. The abiding danger is that we shall forget that technique and content ought to direct each other and in-service training will become a matter of putting new material in the teacher's briefcase. At the heart of our strategy there must be a profound concern for things which give rise to an intensely motivated effort, a personalized preoccupation with the yet unattained, a continuing quarrel with the senseless and ineffectual, and an unfettered inventiveness in style and approach.

From a tactical standpoint several observations are appropriate. We shall not get far unless scmeone in the school unit is given responsibility for a significant program of staff growth, and unless this person is an imaginative and skilled entrepreneur. Moreover, we cannot indefinitely continue to beg the question with regard to

incentive. We are asking, after all, for a giving up of the easy for the better, for a yielding of the familiar for the unknown, and for the plain exertion of effort beyond what is necessary for professional survival. We must in turn give something -- whether monetary compensation, or prestige, or even perhaps the simple freedom to pursue one's own bent. Beyond this, we must also give time. So long as the accomplishment of our purpose must be subsidized by time stolen from the teacher's golf game, stamp collection, or literary browsing, progress will be slow. Our profession, to be sure, is not without its dedicated souls, but even dedication is exhaustible.

In its simplest sense, teacher in-service education seeks three ends: the extension of knowledge in general and pertinent subject-matter knowledge in particular; the acquisition of new techniques of teaching; and a shaping of attitude and purpose. The ends are neither mutually exclusive nor alien to the crux of a curriculum for the future. An in-service program for a chemistry teacher, for example, should add to her knowledge of the world as well as of chemistry. It should familiarize her with methods and materials to which she has not previously been exposed, and, ultimately, it should help define her perception of the important, and her sense of mission. Their realization lies in the things teachers read, in the meetings they attend, in the conversations they have with colleagues and experts, in their testing of new methods, and in the careful analysis of their results. Toward these ends, as in love and war, so to speak, all is fair.

The suggestions for an operational scheme which follow are the same for a district of one school or one of fifty schools. Size establishes problems of organization and procedure rather than of operational strategy. The scheme is intended, furthermore, as a tentative model rather than as fixed prescription -- local administrative leadership can tailor the structure to the particular setting which exists. The principal components of the strategy are as follows:

1. Each teacher must be made to recognize that he or she plays a crucial role in curriculum improvement; namely, to assess the shortcomings of the existing program, to better it through one's own experimentation, and to test the value of improvements suggested by the research of others.
2. Each teacher must guard against complacency, seek to manage personal artistry, be governed by personal insights, and draw systematically, from the aggregate resources, whatever will most improve performance.
3. Each teacher must have the requisites of time and materials so as to be consistently informed about new developments, and to select intelligently from alternatives, and each must make periodic judgements regarding the adequacy of instructional outcomes.
4. Each teacher must have recourse to the special kinds of technical assistance which he or she specifies, whether in the form of expert consultation, time for

cooperative endeavor, opportunity for skill mastery, or provisions for theoretical study.

5. The task of leadership is to set forth expected in-service accomplishment, to provide the wherewithal for its achievement, to unshackle the individual teacher from those aspects of organizational life that are restricting, and to evaluate the end results.

The substance of the strategy lies in its emphasis on the individual, matching idiosyncratic preparation with what is a most idiosyncratic art; in its systematic provision for overcoming the pitfalls of fragmentation; and in its demand that the nature of in-service activity be determined by the teacher's particular objective at the particular time. While the shift from mass programming is admittedly difficult, the end gives promise of justifying the means.

6. With respect to the educational future, in-service can anticipate problems on the horizon, but it cannot anticipate too far in advance. Thus, in-service is best advised -- as it copes with the present -- to focus upon whatever future provisions promise to have relatively immediate utility.